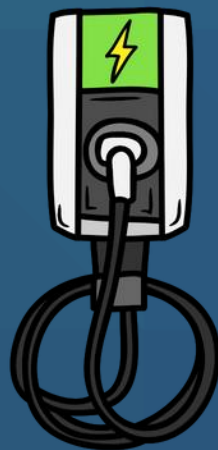


Layman's Report

JAHARP2022-03

E-car charging stations/cables &
Chainsaws



"Every day across the EU, invisible guardians work behind the scenes to keep unsafe and non-compliant products off the shelves and fairness on the playing field.

Because safety is not a product—it's a process that never stops."

PROSAFE – The Product Safety Forum of Europe



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List of abbreviations

AC	Alternating Current
ADCO	Administrative Cooperation Group
CE	European Conformity (Conformité Européenne)
CEN	European Committee for Standardization
DG GROW	Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs
DoC	Declaration of Conformity
EEA	European Economic Area
EISMEA	European Innovation Council and SMEs Executive Agency
EMC	Electromagnetic Compatibility
EN	European Standards
EO	Economic Operator
EU	European Union
GA	Grant Agreement
ICSMS	Information and Communication System for Market Surveillance
ISO	International Organization for Standardization
LVD	Low Voltage Directive
MS	Member State
MSA	Market Surveillance Authority
OJ	Official Journal of the European Union
RED	Radio Equipment Directive
WP	Work Package

Executive Summary

The [Joint Action on Harmonised Products 2022-03](#) (JAHARP2022-03) started in April 2023 and ended in March 2025.

The project focused on verifying the compliance of two product categories:

- **electric vehicle (EV) charging stations and cables** against the Radio Equipment Directive (RED) 2014/53/EU¹, the Low Voltage Directive (LVD) 2014/35/EU², and the Electromagnetic Compatibility Directive (EMC) 2014/30/EU³
- **non-professional electric chainsaws** against the Machinery Directive 2006/42/EC⁴, the Machinery

¹ [Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC](#)

² [Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits](#)

³ [Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility](#)

⁴ [Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery, and amending Directive 95/16/EC](#)

Regulation (EU) 2023/1230⁵ and the Low Voltage Directive (LVD) 2014/35/EU

The participating Market Surveillance Authorities (MSAs) selected **16 e-car charging stations/cables** and **13 electric chainsaws** (both corded and battery-powered) for non-professional use which underwent administrative checks and laboratory testing.

All e-car charging stations/cables tested failed to meet the essential electrical safety requirements, while 50% also failed EMC compliance testing.

Concerning chainsaws, **only two models passed all mechanical safety tests**, while no critical issues were found on electrical tests, against which 80% of the tested products were evaluated as compliant.

Administrative non-conformities were also observed for both product categories, and MSAs encountered meaningful challenges in acquiring documentation from Economic Operators (EOs).

⁵ [Regulation \(EU\) 2023/1230 of the European Parliament and of the Council of 14 June 2023 on machinery and repealing Directive 2006/42/EC of the European Parliament and of the Council and Council Directive 73/361/EEC](#)



Highlights and key results

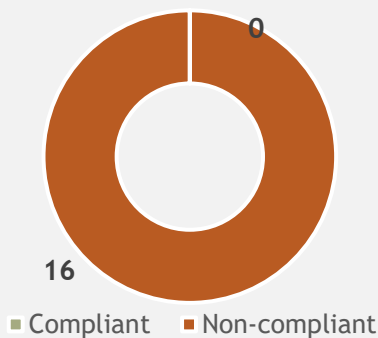
Caution! The results are based on products that were sampled from the markets in the participating countries by experienced market surveillance inspectors. As in any routine market surveillance activity, the results represent the targeted efforts that authorities undertake to identify non-compliant products. They do not give a statistically valid picture of the market situation.

E-CAR CHARGING STATIONS/CABLES

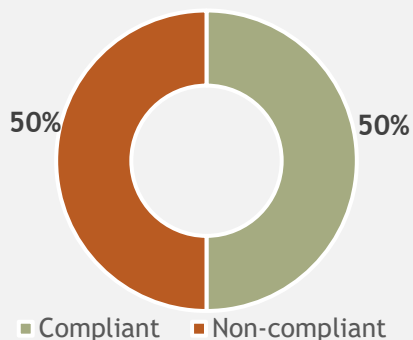
16

Inspected
and tested

Electrical safety test results



EMC compliance test results



1 sale ban



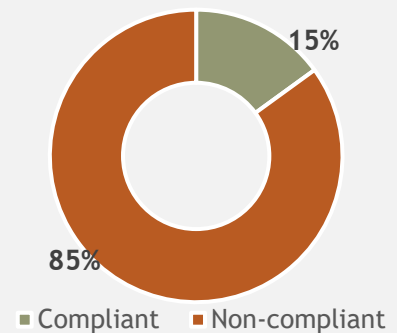
4 withdrawals

CHAINSAWS

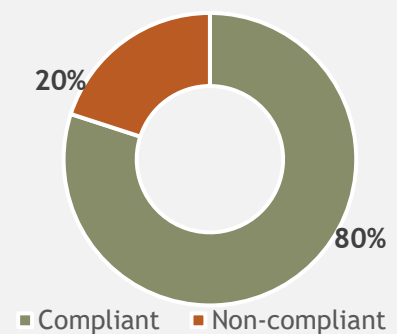
13

Inspected
and tested

Mechanical test results



Electrical test results



3 sale bans





5 withdrawals

JAHARP2022 Omnibus

The **Joint Market Surveillance Action on HARmonised Products 2022 (JAHARP2022)** is a portfolio of projects co-funded by the European Union, comprising seven product areas and two horizontal/capacity building activities, implemented in synergy.

The shared strategic objective of JAHARP2022 is twofold:

-  Remove non-compliant products from the Single Market
-  Support the implementation of Regulation (EU) 2019/1020⁶ on Market Surveillance

Market Surveillance on products entering the Single Market is the responsibility of national authorities, which have to adhere at the same time to European and national legislation, in some cases causing differences in the implementation.

For this reason, and because of the emerging challenges that Market Surveillance Authorities (MSAs) face in their daily work, joint actions are an essential tool to promote the coordination and harmonisation of practices and methodologies among European authorities, by conducting transnational campaigns focused on specific products and legislations and favouring the exchange of information and best practices.

An overview of the projects part of the JAHARP2022 portfolio is provided in the figure below.



Caution! The results are based on products that were sampled from the markets in the participating countries by experienced market surveillance inspectors. As in any routine market surveillance activity, the results represent the targeted efforts that authorities undertake to identify non-compliant products. They do not give a statistically valid picture of the market situation.

⁶ Regulation (EU) 2019/1020 of the European Parliament and of the Council of 20 June 2019 on market surveillance and compliance of products and amending Directive 2004/42/EC and Regulations (EC) No 765/2008 and (EU) No 305/2011

Introduction to JAHARP2022-03

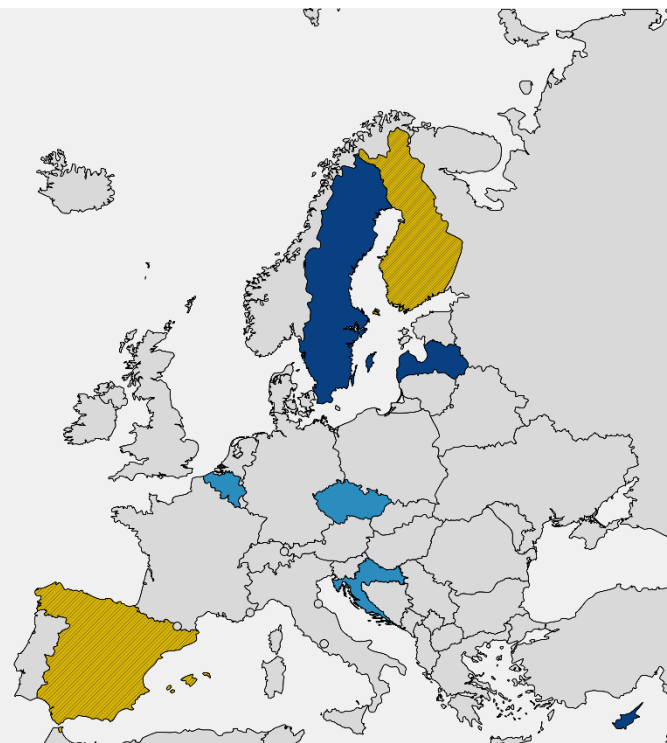
Participating authorities

The Joint Action was undertaken by nine (9) Market Surveillance Authorities from 8 EU countries:

Belgium, Cyprus, Croatia, Czech Republic, Finland, Latvia, Spain, and Sweden.

Six (6) authorities participated in Work Package 2 on E-car charging stations/cables and five (5) authorities participated in Work Package 3 on Chainsaws.

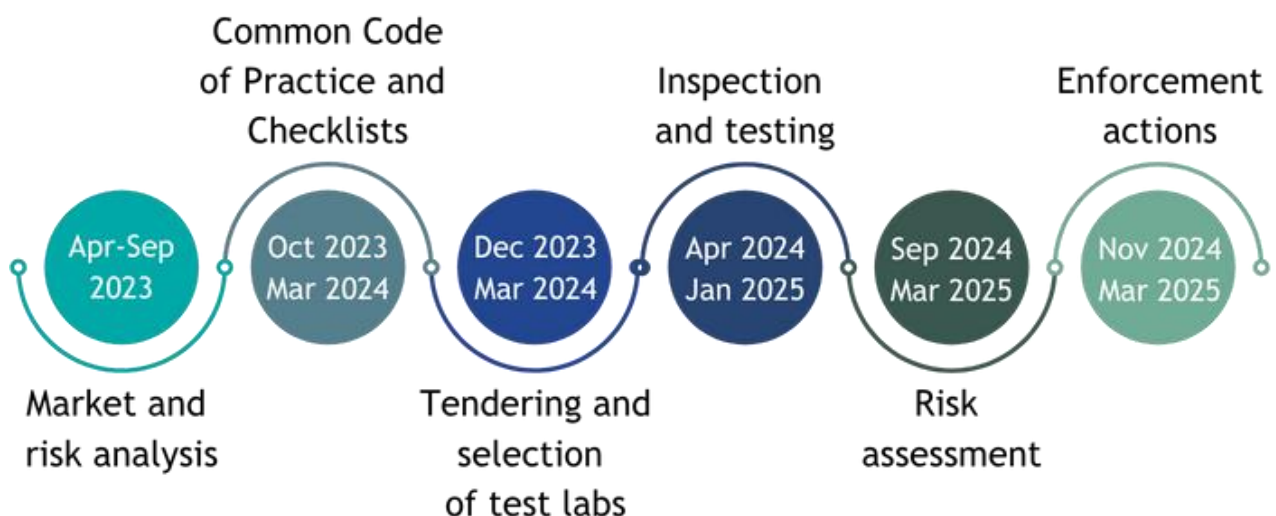
■ Both WPs
■ Only WP2
■ Only WP3



Timeline of the Joint Action

The Joint Action followed the methodology of the typical market surveillance cycle, starting with market and risk analysis which informed the decisions on the products to be selected for document inspections and for laboratory testing. Three laboratories were selected through a tender procedure aimed at identifying the test body offering high expertise at the best value for money. Based on the results, the national authorities assessed the risks posed by non-compliant products to consumers and the market and took appropriate enforcement actions.

The timeline of the project activities is shown in the graph below.



E-car charging stations/cables

The activity concerned **EV chargers intended for domestic installation**. These are fixed Alternate Current (AC) chargers permanently connected to the supply network with a control pilot, and with a rating of approximately 11 kW and a Type 2 (European) connector.

The product category was selected for investigation because of the growing market share of electric vehicles, which implies the need for a greater number of public and residential charging stations.

In order to reach the goals of the European Green Deal, the shift in mobility choices from fossil fuel carburant to e-cars is of outmost importance, and therefore consumers' trust on the reliability and efficiency of these products needs to be ensured.

The e-car chargers should fulfil all essential and administrative requirements stated in the RED and all essential and administrative requirements stated in the relevant regulatory act for the respective vehicle field.

In particular, Article 3 of the RED sets out the essential requirements as below.

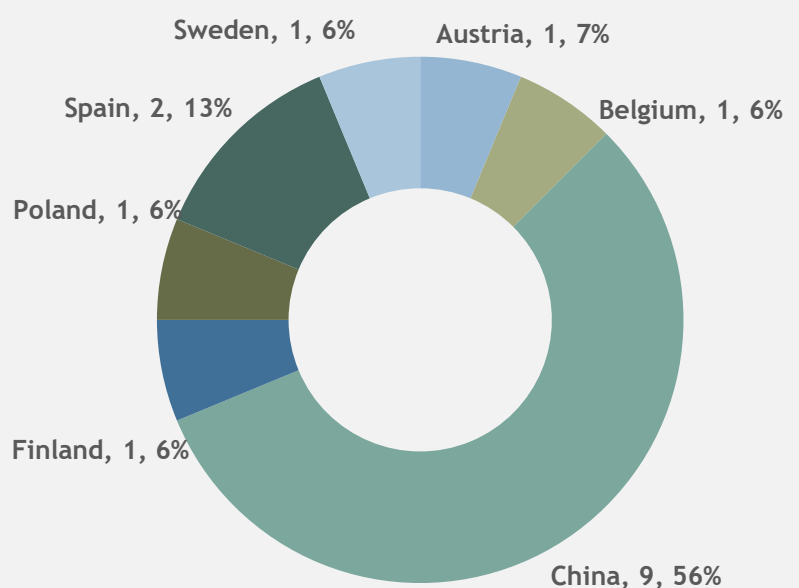
1. *Radio equipment shall be constructed so as to ensure:*
 - a. *The protection of health and safety of persons and of domestic animals and the protection of property, including the objectives with respect to safety requirements set out in Directive 2014/35/EU, but with no voltage limit applying*
 - b. *An adequate level of electromagnetic compatibility as set out in Directive 2014/30/EU.*

The joint action targeted e-car chargers for the first time, therefore the MSAs focused on product testing for the most essential electrical safety and EMC requirements, as per article 3 above, paragraph 1.

The MSAs identified 16 models for inspection and testing. The graph on the left provides an overview of the Countries of origin of the selected samples.

It can be noticed that over 50 percent of the products were manufactured outside of the EU.

Samples countries of origin



Document inspections

The project conducted a verification of the relevant aspects of the RED technical documentation, focusing on safety (LVD) and electromagnetic compatibility (EMC).

Manufacturers are required to ensure that each item of radio equipment is accompanied by either a full **EU Declaration of Conformity (DoC)** or a simplified version of it. When a simplified EU DoC is provided, it must include the internet address where the complete text of the EU DoC can be accessed. The participating MSAs requested the Economic Operators to provide the DoCs, which were evaluated against the requirements set in Article 10.3 of the RED.

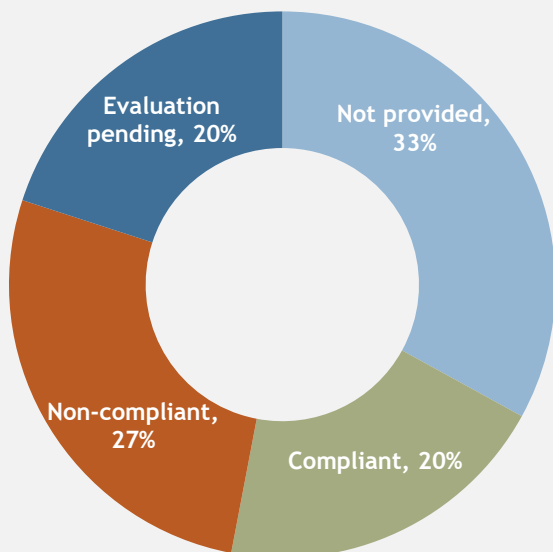
During the follow-up phase, where applicable, MSAs also requested **test reports**, in order to further verify product compliance and the reliability of EOs declared values.

The authorities encountered **several difficulties in obtaining the requested documentation from manufacturers**. Failure of providing the documents is considered as a non-conformity in itself.

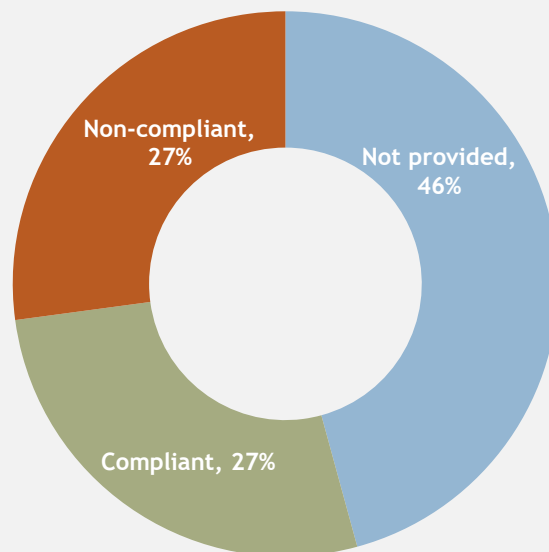
In addition, a **high number of the documents which were received were assessed as non-compliant**, due to missing or incorrect information.

The graphs below show the percentage of the non-provided DoCs and test reports and the observed non-compliance levels.

DoC inspection results



Test Reports inspection results



Caution: the results represent the targeted efforts that authorities undertake to identify non-compliant products. They do not give a statistically valid picture of the market situation.

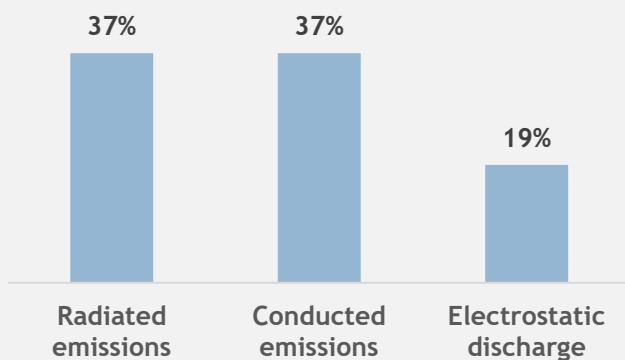
Laboratory tests

The 16 selected products were sent for testing to an accredited laboratory, in order to verify their compliance with electrical safety (LVD) in accordance with article 3.1(a) of the RED and electromagnetic compatibility requirements, according to article 3.1(b).

EMC tests were conducted before safety tests as the latter ones are usually destructive for the product.

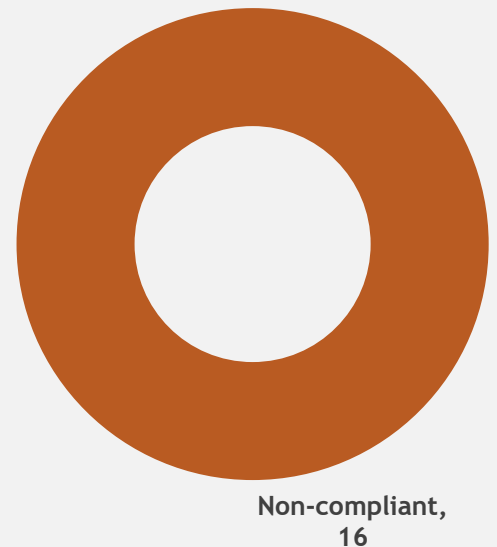
All products failed on at least one parameter, proving that more work needs to be done in order to ensure that products on the market are safe for consumers.

Percentage of products failing against EMC parameters

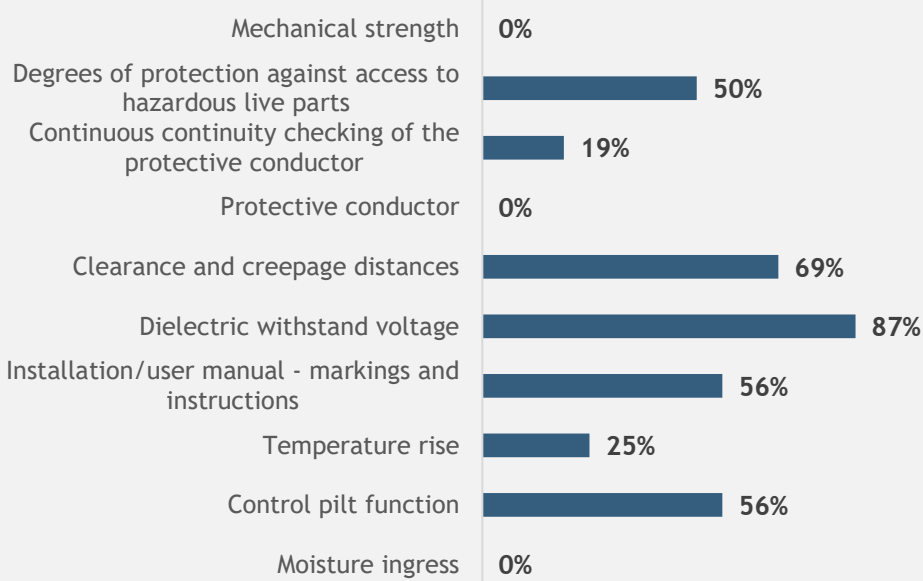


Test results

Compliant, 0



Percentage of products failing against LVD parameters





Caution: the results represent the targeted efforts that authorities undertake to identify non-compliant products. They do not give a statistically valid picture of the market situation.

Risk assessment and follow-up measures

The MSAs referred to the [EU Safety Gate](#) risk assessment methodology, assisted by consultations with experts in their authorities dealing with the radio equipment and EMC sectors.

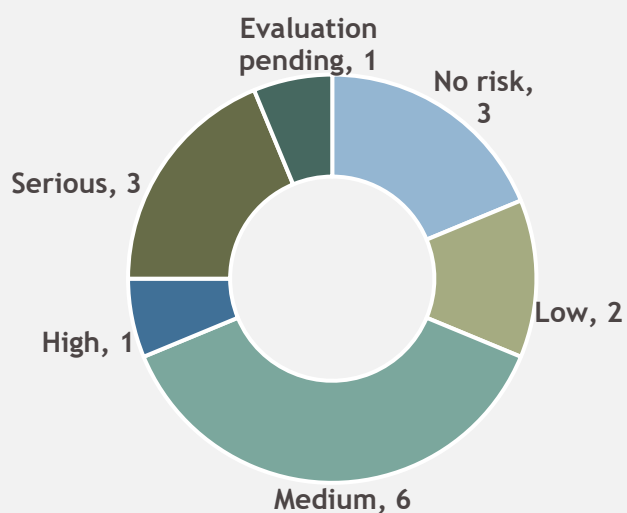
Some of the non-conformities observed during the tests can lead to high or serious risks to consumers' safety. Below, we provide an overview of the two parameters which presented the highest number of failures: dielectric withstand voltage and clearance and creepage distances.

-  **Dielectric withstand voltage:** This parameter measures the insulation ability to withstand high voltage without failing or breaking down. Products failing this test carry a higher risk of electric shocks, short circuits and equipment damage.
-  **Clearance and creepage distances:** The clearance distance is the shortest air distance between two conductive parts and between a conductive part and the accessible surface, while the creepage distance is the shortest distance along the surface of the insulation between two conductive parts or between a conductive part and the accessible surface. To reduce the likelihood of breakdown and maintain protection against electric shock, the clearances and creepage distances must be appropriately dimensioned.

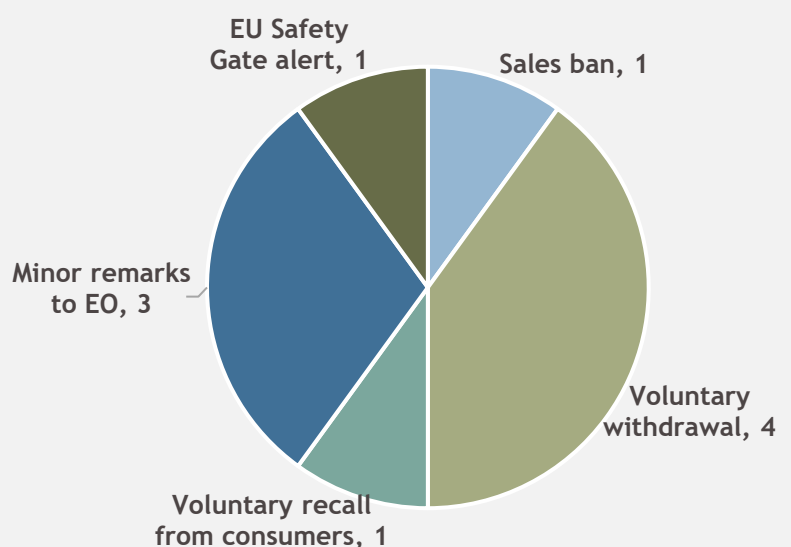
The MSAs evaluated the risks posed by each sample based of the non-conformities observed, as in the graph below.

After the assessment of the risks, they contacted the Economic Operators and took enforcement measures as appropriate. As a result, four products were voluntarily withdrawn from the market and one was recalled from consumers by the responsible Economic Operators, while a sales ban was issued against one product.

Risk assessment results



Follow-up & enforcement measures



Chainsaws

The workgroup investigated electrical chainsaws for non-professional use and focused mostly on battery powered chainsaws.

These were considered as requiring special consideration given their **relative novelty and attractiveness to non-professional users due to their low market price and practical advantages**, as they could be easily transported and used away from an electricity source.

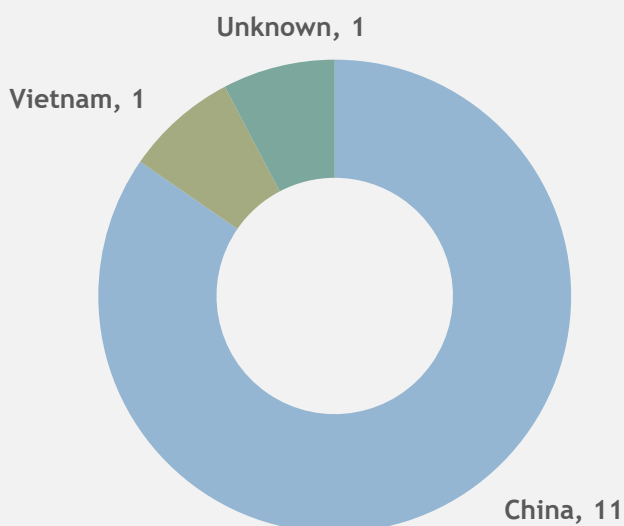
Document inspections

Each participating MSA carried out marking and technical documentation checks. The outcome of these checks revealed that **all 13 models failed to meet the full set of requirements**. The assessment was conducted using a 29-page checklist developed by the project coordinator and the MSAs, which incorporated all relevant requirements from the applicable standards, the Machinery Directive, and the Machinery Regulation.

The EU Declaration of Conformity (DoC) plays a crucial role in market surveillance, ensuring both the traceability of machinery placed on the market and its conformity assessment. Furthermore, all machinery must be accompanied by instructions in the official Community language of the Member State in which it is placed on the market.

The graphs below provide an overview of the country of origin of the sampled products and of their non-compliance rate with administrative requirements.

Samples countries of origin



Document checks results



Caution: the results represent the targeted efforts that authorities undertake to identify non-compliant products. They do not give a statistically valid picture of the market situation.

Laboratory tests

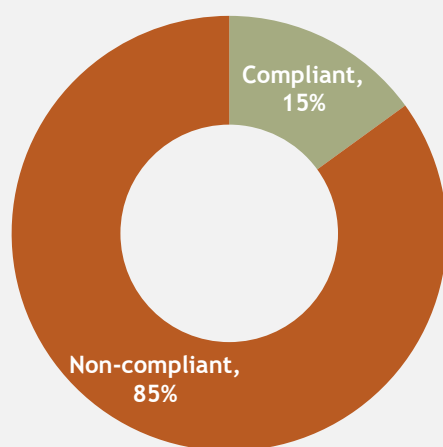
The samples were tested by two accredited laboratories against mechanical requirements in the Machinery Directive and electrical requirements in the Low Voltage Directive. Due to budget and time restraints, the project team designed a risk-based test programme covering the most essential safety requirements in the applicable standard.

In total, **12 out of the 13 products were non-compliant.**

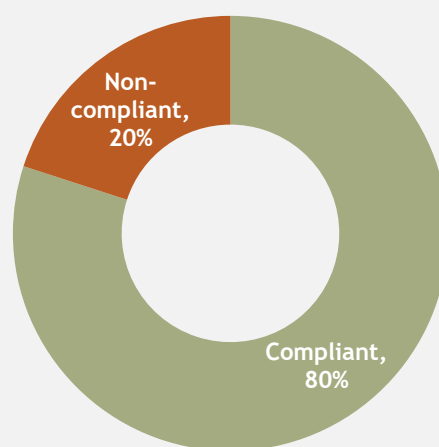
In particular, **11 out of 13 models (85 %) failed at least one mechanical test**, while results were more positive in relation to electrical tests, with **80% of the tested products being compliant with the regulation**. Electrical failures were mostly found in the battery chargers rather than in the machine itself.

The graphs below present the level of non-compliance and the observed non-conformities.

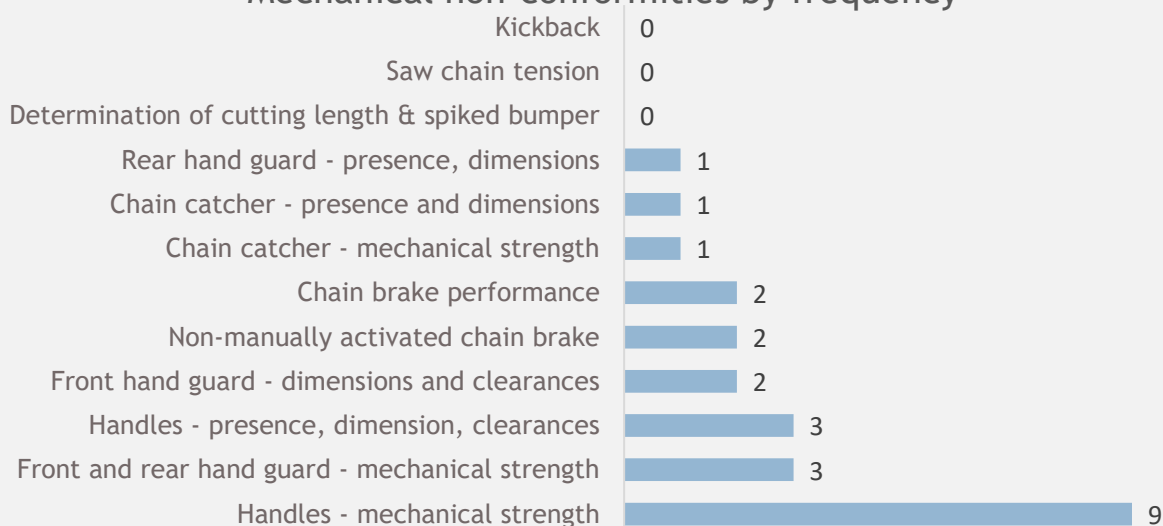
Mechanical test results



Electrical test results



Mechanical non-conformities by frequency



Caution: the results represent the targeted efforts that authorities undertake to identify non-compliant products. They do not give a statistically valid picture of the market situation.

Risk assessment and follow-up measures

The workgroup conducted the risk assessment during an online workshop session involving MSA participants, as well as experts from the two test laboratories.

The primary risk group was identified as **untrained and inexperienced consumers**, who are the most likely buyers of budget chainsaws. Further considerations included various user scenarios, such as pruning, firewood cutting, disregarding instructions, and working in unstable positions (e.g., on a ladder).

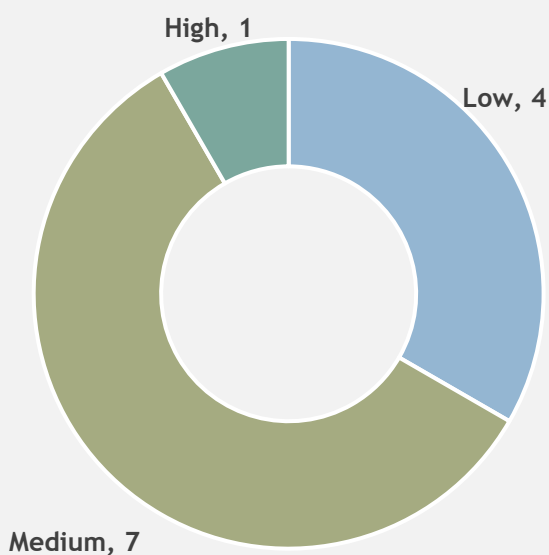
During the session, participants collaborated to estimate the potential hazards, the possible resulting harm, the severity of that harm, and the likelihood of different scenarios. Notably, the estimations among the experts showed minimal variation, increasing their reliability and value.

The final risk level was determined by integrating these findings into the EU risk assessment tool. The result is shown in the graph below.

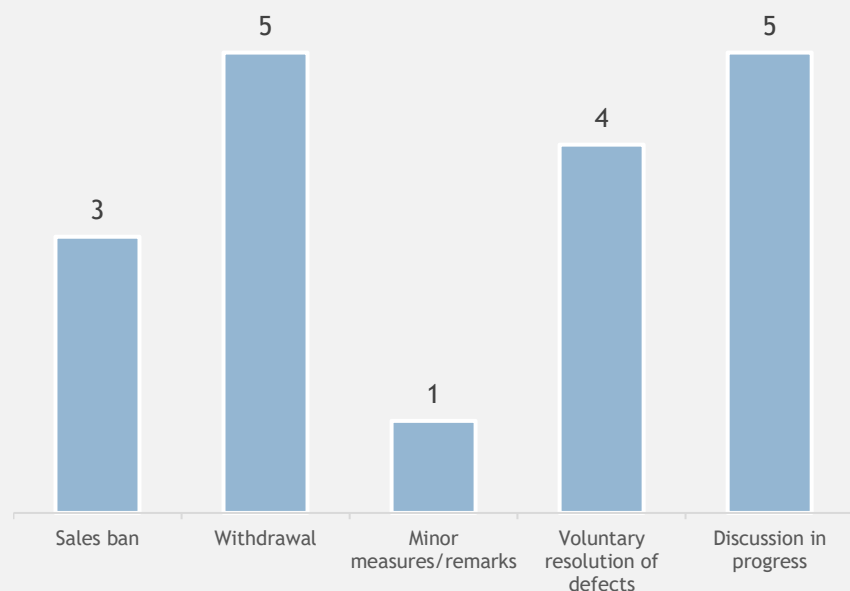
The MSAs evaluated the risk of each non-compliant product based on the non-conformities detected. In one case, the front hand bar was too close to the trigger that activates the chainsaw, making it easier, and in some situations inviting, to use the chainsaw with one hand, which could lead to harm to the other hand and to losing control of the machine direction. Therefore, this non-conformity was considered as **high risk**.

Based on the risk assessed, the MSAs contacted the Economic Operators and took enforcement actions as deemed necessary. The graph below shows the follow-up and enforcement measures which were undertaken.

Risk class of non-compliant models



Follow-up & enforcement measures



Recommendations

Based on the non-conformities observed on the market in relation to the two products, the market surveillance authorities drafted some recommendations for Economic Operators and for consumers, together with some policy recommendations for the European legislative and standardisation bodies. These are presented below:

Recommendations for Economic Operators

Markings and Instructions: Economic Operators should ensure that the products have all needed markings and that user instructions are available in the national languages of the Countries where they are sold.

EU Legislation: Economic Operators should ensure the products are safe and compliant with all applicable EU Legislations.

Safety Gate: Consumers should consult the Safety Gate portal to check for products subject to corrective measures.

Recommendations for Consumers

Instructions: Consumers should read the user instructions and make sure to take all necessary precautions before using the products.

Policy recommendations:

Improved standards: The project group found that the standards related to chainsaws present gaps in addressing safety concerns, such as minimum distance between the handle and the trigger.

In addition, CEN should consider that chainsaws are also used by untrained consumers, therefore safety requirements should be more stringent.

Mini chainsaws: Currently, no specific standard exists for these increasingly popular, low-cost products. Therefore, it is recommended to develop a specific standard for this product category.

Guidance: Economic Operators would require further guidance on all administrative and technical requirements that should be fulfilled before placing a product on the market.

Conclusions and lessons learned

The JAHARP2022-03 joint action provided useful information on the level of compliance on the market of EV charging stations/cables and electric chainsaws.

Most of the e-car charging stations and cables were sampled from online retailers, which implied that the **manufacturers did not provide the component specifications and approval data that is needed for type-testing**. The absence of this documentation represented a challenge for the laboratory and for the MSAs when evaluating the test results.

The chainsaws project group encountered difficulties in finding suitable laboratories due to lack of kickback testing capacity and high test costs. In addition, a rigorous and undisputable test programme requires a new out-of-the-box sample for many test parameters therefore the authorities had to sample a larger number of specimens for each product model.

All in all, the project has reinforced the role of coordinated market surveillance in protecting European consumers. It has shown that when authorities work together, they can identify problems more efficiently, take stronger enforcement actions, and push for higher compliance across the Single Market. It is hoped that this action will support future joint activities in promoting product compliance, as per Regulation (EU) 2019/1020, Article 9.

The remarkably high non-conformity rate observed in both categories, despite the risk-based approach to sampling and the relatively small sample sizes, suggests **the need for follow-up national and joint testing campaigns on this product**.

JAHARP2022-03 was part of the [JAHARP2022](#) portfolio of joint actions, involving 25 MSAs from 16 Countries and coordinated by [PROSAFE](#). The Joint Actions focused on seven product categories falling under different Safety and Energy Efficiency legislations and on the harmonisation of market surveillance methodologies across member States.



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